

AMENDMENT UNDER 37 C.F.R. § 1.111
Appln. No. 09/909,988
Docket No. Q64671

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 (currently amended): An apparatus of estimating a lifetime of a cutter for cutting a sheet comprising:

a detector for detecting a value of a parameter representing a cutting resistance during sheet cutting, wherein the parameter is a value of a current loaded on the motor;

a comparator for comparing the detected value of the parameter with a predetermined reference value, wherein the comparator determines that the cutter is unfit for use when the value of the parameter exceeds the predetermined reference value;

an output element for outputting a result based on the comparison; and

a motor for driving the cutter;

~~wherein the parameter is a value of a current loaded on the motor.~~

2. (canceled).

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3 (previously presented): The apparatus of claim 1, wherein the detector comprises an ammeter for measuring the value of the current.

4 (withdrawn): An apparatus of estimating a lifetime of a cutter for cutting a sheet comprising:

a detector for detecting a value of a parameter representing a cutting resistance during sheet cutting;

a comparator for comparing the detected value of the parameter with a predetermined reference value; and

an output element for outputting a result based on the comparison;

wherein the parameter is a time that is required from beginning to completion of cutting.

5. (withdrawn): The apparatus of claim 4, wherein the detector comprises a timer element for measuring said time required.

6. (canceled).

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7. (original): The apparatus of claim 1, wherein the comparator is included in a microcomputer.

8. (original): The apparatus of claim 1, wherein the output element comprises a visual display.

9. (canceled).

10. (previously presented): A method of estimating a lifetime of a cutter for cutting a sheet comprising the steps of:

(a) detecting a value of a parameter representing a cutting resistance during sheet cutting, wherein the parameter is a value of a current that is loaded onto a motor for driving the cutter;

(b) comparing the detected value of the parameter with a predetermined reference value, wherein it is determined that the cutter is unfit for use when the value of the parameter exceeds the predetermined reference value; and

(c) outputting a result based on the comparison;
~~wherein the parameter is a value of a current that is loaded onto a motor for driving the~~
cutter.

11. (withdrawn): A method of estimating a lifetime of a cutter for cutting a sheet comprising the steps of:

- (a) detecting a value of a parameter representing a cutting resistance during sheet cutting;
 - (b) comparing the detected value of the parameter with a predetermined reference value;
- and
- (c) outputting a result based on the comparison,

wherein the parameter is a time that is required from beginning to completion of cutting.

12. (canceled).

13. (withdrawn): A sheet cutter for cutting a sheet piece from a sheet by shearing, the sheet cutter comprising:

- a fixed blade;
- a movable blade which is movable along the fixed blade; and
- a life estimation element for estimating a life span of the movable blade.

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14. (withdrawn): The sheet cutter of claim 13, wherein the life estimation element comprises:

a detector for detecting a value of a parameter representing a cutting resistance during sheet cutting;

a comparator for comparing the detected value of the parameter with a predetermined reference value; and

an output element for outputting a result based on the comparison.

15. (withdrawn): The sheet cutter of claim 14, further comprising a motor for driving the cutter, wherein the parameter is a value of a current loaded on the motor.

16. (withdrawn): The sheet cutter of claim 14, wherein the parameter is a time that is required from beginning to completion of cutting.

17. (withdrawn): The sheet cutter of claim 14, wherein it is determined that the cutter is unfit for use when the value of the parameter exceeds the predetermined reference value.

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18. (withdrawn): A sheet cutter for cutting a sheet piece from a sheet by shearing, the sheet cutter comprising:

a fixed blade;

a movable blade which is movable along the fixed blade;

a receiving element which receives the sheet piece that is cut off from the sheet, the receiving element being structured so as to be movable together with the movable blade; and

a life estimation element for estimating a life span of the movable blade.

19. (withdrawn): The sheet cutter of claim 18, further comprising a support for supporting the movable blade and a support for supporting the receiving element, the supports being substantially integral with each other.

20. (withdrawn): The sheet cutter of claim 18, wherein the movable blade comprises a disk which is rotatably supported, and the receiving element comprises a roller which is rotatably supported.

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21. (withdrawn): The sheet cutter of claim 18, wherein the receiving element has a groove that receives an edge portion of the piece of sheet which is cut off, which edge portion is in a state in which it hangs down after cutting.

22. (previously presented) A sheet cutter for cutting a sheet piece from a sheet by shearing, the sheet cutter comprising:

a fixed blade;

a movable blade which is movable along the fixed blade; and

the apparatus for estimating a lifetime of a cutter of claim 1, wherein the apparatus estimates the lifetime of the movable blade.

23. (previously presented) The sheet cutter for cutting a sheet piece from a sheet by shearing of claim 22, further comprising:

a receiving element which receives a sheet piece that is cut off from the sheet, the receiving element being structured so as to be movable together with the movable blade.

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24. (previously presented) The sheet cutter of claim 23, further comprising a support for supporting the movable blade and a support for supporting the receiving element, the supports being substantially integral with each other.

25. (previously presented) The sheet cutter of claim 23, wherein the movable blade comprises a disk which is rotatably supported, and the receiving element comprises a roller which is rotatably supported.

26. (previously presented) The sheet cutter of claim 23, wherein the receiving element has a groove that receives an edge portion of the piece of sheet which is cut off, which edge portion is in a state in which it hangs down after cutting.